

receiving Office use only
International Application.
International Filing Date
Name of receiving Office and "PCT International Application"
Applicantic or accepta file reference

			International Filin	g Date	
The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.		Name of receiving Office and "PCT International Application"			
			Applicant's or age (if desired) (12 ch	art's file reference 2000.086	
Box No. I	TITLE OF INVENTIO	N	_		
METHOD AN	D SYSTEM FOR SEPAI	RATING A COMPON	ENT FROM A MU	LTI-COMPONENT GAS	
Box No. II	APPLICANT	This person	is also inventor		
Name and address: (Family name followed by given name; for a legal entity, further address must include postal code and name of country. The country of the add Box is the applicant's State (that is, country) of residence if no State of residence is EXXONMOBIL UPSTREAM RESEARCH COMPANY P. O. Box 2189  Houston, Texas 77252-2189			dress indicated in this	Telephone No. 713.431.4811 Facsimile No. 713.431.4664 Teleprinter No.	
United States				Applicant's registration No. with the Office	
State (that is, c	ountry) of nationality:		State (that is, co	untry) of residence:	
This person is a for the purposes	pplicant all designa s of: States	all designated the United S	ed States except States of America	the United States of America only the States indicated in the Supplemental Box	
Box No. III	FURTHER APPLICA	NT(S) AND/OR (FUR	THER) INVENTO	R(S)	
The address must in	rook 77345	ountry. The country of the add	dress indicated in this	This person is:  applicant only  applicant and inventor  inventor only (If this check-box is marked, do not fill in below.)  Applicant's registration No. with the Office	
State (that is, co	ountry) of nationality:		State (that is, co	untry) of residence:	
This person is a for the purposes	Canada T	all designated the United S	d States except tates of America	the United States the States indicated in the Supplemental Box	
Further ap	plicants and/or (further) in	ventors are indicated or	a continuation she	et.	
Box No. IV	AGENT OR COMMO	N REPRESENTATIVI	E; OR ADDRESS I	FOR CORRESPONDENCE	
	ntified below is hereby/has (s) before the competent I			agent common representative	
Name and addr	CSS: (Family name followed by gi The address must include po	iven name; for a legal entity, j stal code and name of countr		Telephone No. 713.431.4811	
P. O. Box 218 Houston, Texa	pstream Research Com 9 as 77252-2189	pany		Facsimile No. 713.431.4664 Teleprinter No.	
United States	OI AIRERGA			Agent's registration No. with the Office 43,561	
Address space abo	for correspondence: Mari ve is used instead to indica	k this check-box where ate a special address to	no agent or common	representative is/has been appointed and the	

					Sheet No2	`		
Box	No.	DESIGNATION OF STATES		Л	Mark the applicable check-boxes be	low:	at l	east one must be marked.
The	follo	wing designations are hereby made un	der :	Rule 4	4.9(a):			
Reg	ional	Patent						
⊠ .	AP	ARIPO Patent: GH Ghana, GM G Sierra Leone, SZ Swaziland, TZ Un State which is a Contracting State of specify on dotted line)	amb ited the I	ia, K Repul Iarare	E Kenya, LS Lesotho, MW Malablic of Tanzania, UG Uganda, ZM e Protocol and of the PCT (if other	awi, Zan kind	MZ nbia l of j	Z Mozambique, SD Sudan, SL ZW Zimbabwe, and any other protection or treatment desired,
X	EA	Eurasian Patent: AM Armenia, A Moldova, RU Russian Federation, T.	Z A J Ta	zerba jikista	aijan, BY Belarus, KG Kyrgyzsta an, TM Turkmenistan, and any oth	an, l er S	KZ tate	Kazakhstan, MD Republic of which is a Contracting State of
⊠ I		European Patent: AT Austria, BI CZ Czech Republic, DE Germa Kingdom, GR Greece, IE Ireland, II SI Slovenia, SK Slovakia, TR Tur Convention and of the PCT	кеу,	ana	any other State which is a Con	шас	ung	State of the European Patent
X	OA	OAPI Patent: BF Burkina Faso, Cameroon, GA Gabon, GN Guinea, SN Senegal, TD Chad, TG Togo, an PCT (if other kind of protection or tree	BJ GQ d ar	Beni Equating oth ent de	in, CF Central African Republic torial Guinea, GW Guinea-Bissau ter State which is a member State estred, specify on dotted line	, CO , MI of O	G C L M API	ongo, CI Côte d'Ivoire, CM ali, MR Mauritania, NE Niger, and a Contracting State of the
Nat	ional	Patent (if other kind of protection or	trea	tment	desired, specify on dotted line):			
		United Arab Emirates				X	ΝZ	New Zealand
=	AG	Antigua and Barbuda			Croatia	$\boxtimes$	OM	Oman
_	AL	Albania	$\boxtimes$	HU	Hungary	X	PH	Philippines
X	AM	Armenia	X	ID	Indonesia			Poland
X	ΑT	Austria	X	$\mathbf{n}$				Portugal
$\boxtimes$	ΑU	Australia			India	$\boxtimes$	RO	Romania
X	ΑZ	Azerbaijan			Iceland	X	RU	Russian Federation
$\boxtimes$	BA	Bosnia and Herzegovina	$\boxtimes$	JP	Japan			
X	BB	Barbados			Kenya	$\boxtimes$	SC	Seychelles
X	BG	Bulgaria	X	KG	Kyrgyzsta	$\boxtimes$	SD	Sudan
×	BR	Brazil	X	KР	Democratic People's Republic			Sweden
×	BY	Belarus			of Korea	$\boxtimes$	SG	Singapore
×	ΒZ	Belize	X	KR	Republic of Korea	X	SK	Slovakia
$\overline{\boxtimes}$	CA	Canada			Kazakhstan			
$\overline{\boxtimes}$	CH (	& LI Switzerland and Liechtenstein	X	LC	Saint Lucia	$\boxtimes$	TJ	Tajikistan
	CN	China			Sri Lanka	$\boxtimes$	TM	Turkmenistan
_	CO	Colombia		LR	Liberia	$\boxtimes$	TN	Tunisia
	CR	Costa Rica	X	LS	Lesotho	X	TR	Turkey
	CU	Cuba	X	LT	Lithuania			Trinidad and Tobago
X		Czech Republic	X	LU	Luxembourg			
X		Germany			Latvia	$\boxtimes$	TZ	United Republic of Tanzania
=	DK	Denmark			Morocco			Ukraine
	DM	Dominica						Uganda
Ø		Algeria						United States of America
		Ecuador	X	MG	Madagascar			
_	EE	Estonia			The former Yugoslav Republic of	$\boxtimes$	υz	
_	ES	Spain			Macedonia			Saint Vincent and the Grenadine
X		Finland	X	MN	Mongolia			Viet Nam
_	GB	United Kingdom			Malawi			Yugoslavia
	GD	Grenada			Mexico			South Africa
	GE	Georgia	×		Mozambique			Zambia
	GE	Ghana			Norway			Zimbabwe

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)

SY SYRIAN ARAB REPUBLIC ...

Check-boxes below reserved for designating States which have become party to the PCT after issuance of this sheet:

⋈ NJ NJCARAGUA⋈ PG PAPUA NEW GUINEA

(ii)

If, in any of the Boxes, except Boxes Nos VIII(i) to (v) for which a special continuation box is provided, the space is insufficient to furnish all the information: in such case, write "Continuation of Box No...." (indicate the number of the Box) and furnish the WILSON, Pamela L.; WOLFS, Denise Y. information in the same manner as required according to the captions of the Box in which the space was insufficient, in EXXONMOBIL UPSTREAM RESEARCH COMPANY particular:

if more than two persons are to be indicated as applicants and/or inventors and no "continuation sheet" is available: in such case, write "Continuation of Box No. III" and indicate for each additional person the same type of information as required in Box No. III. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below;

if, in Box No. II or in any of the sub-boxes of Box No. III, the indication "the States indicated in the Supplemental Box" checked: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the applicant(s) involved and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is applicant;

(iii) if, in Box No. II or in any of the sub-boxes of Box No. III, the inventor or the inventor/applicant is not inventor for the purposes of all designated States or for the purposes of the United States of America: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the state of the case of the state of the stat of the inventor(s) and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is inventor;

(iv) if, in addition to the agent(s) indicated in Box No. IV, there are further agents: in such case, write "Continuation of Box No. IV and indicate for each further agent the same type of information as required in Box No. IV;

(v) if, in Box No. V, the name of any State (or OAPI) is accompanied by the indication "patent of addition," or "certificate of addition," or if, in Box No. V, the name of the United States of America is accompanied by an indication "continuation" or "continuation-in-part": in such case, write "Continuation of Box No. V" and the name of each State involved (or OAPI), and after the name of each such State (or OAPI), the number of the parent title or parent application and the date of grant of the parent title or filing of the parent application;

(vi) if, in Box No. VI, there are more than five earlier applications whose priority is claimed: in such case, write "Continuation of Box No. VI" and indicate for each additional earlier application the same type of information as required in Box No. VI.

2. If, with regard to the precautionary designation statement contained in Box No. V, the applicant wishes to exclude any State(s) from the scope of that statement: in such case, write "Designation(s) excluded from precautionary designation of the statement of the score of the statement of the statement of the score of statement" and indicate the name or two-letter code of each State so excluded.

HOEFLING, Marcy M.; KATZ, Gary P.; LAWSON, Gary D.; PLUMMER, J. Paul; SMITH, Charles E.; WARNER, Darrell E.;

P. O. Box 2189 Houston, Texas 77252-2189 **United States of America** 

	<u>-</u>	Sheet No		
Box No. VI PRIORITY	CEAIM			
The priority of the following e	application(s) is hereby	y claimed:		
Filing date	Number of earlier application		Where earlier application	n is:
of earlier application (day/month/year)	of earlier application	national application: country or Member of WTO	regional application:* regional Office	international application: receiving Office
item (1) 25 September, 2002 (25/09/02)	60/413,350	us		
item (2)				
item (3)				
item (4)				
item (5)				
Further priority claims a	re indicated in the Supplemen	ntal Box.		
The receiving Office is reque (only if the earlier application Office) identified above as:	ested to prepare and transmit on was filed with the Office	t to the International Bur which for the purposes	reau a certified copy of of this international ap	the earlier application(s) plication is the receiving
all items item (1	, <u> </u>	item (3) item (4)		other, see Supplemental Box
* Where the earlier application Industrial Property or one Membe	is an ARIPO application, indic er of the World Trade Organizat	cate at least one country petion for which that earlier ap	arty to the Paris Conventi oplication was filed (Rule 4	ion for the Protection of .10(b)(ii)):
	and normal All			•••••
	Problem Authority (ISA) (66		d disputation on	and the
Choice of International Sea international search, indicate the	rching Authority (ISA) (9) Authority chosen; the two-letter	two or more International code may be used):	Searching Authorities are	e competent to carry out the
ISA/ us				
Request to use results of ea International Searching Authority		that search (if an earlier	search has been carried o	out by or requested from the
International Searching Authority Date (day/month/year)	y): Number	Country (or regi	ional Office)	
Box No. VIII DECLARAT	rions			
The following declarations a check-boxes below and indica	re contained in Boxes Nos. Vite in the right column the nui	VIII (i) to (v) (mark the a mber of each type of decla	applicable aration):	Number of declarations
Box No. VIII (i)	Declaration as to the identity	y of the inventor		:
Box No. VIII (ii)	Declaration as to the applica date, to apply for and be gra		international filing	: 1
Box No. VIII (iii)	Declaration as to the applica date, to claim the priority of		international filing	: 2
Box No. VIII (iv)	Declaration of inventorship United States of America)	(only for the purposes of	the designation of the	: 1
Box No. VIII (v)	Declaration as to non-prejud	dicial disclosures or excep	ptions to lack of novelty	:

America.
October
e of the

Sheet No. ....6...

Box No. VIII (iii) DECLARATION: ENTITLEMENT TO CLAIM PRIORITY
The declaration must conform is standardized wording provided for in Section 213; standardized wording provided for in Section 213; standardized wording provided for in Section 213; standardized to Box No. VIII (i) to (v) (in general) and the specific Notes to Box No. VIII (iii). If this Box is not used, this sheet should not be included in the request.
Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii)):
In relation to this International Application
EXXONMOBIL UPSTREAM RESEARCH COMPANY is entitled to claim priority of earlier Application
No. 60/413,350 filed 25 September 2002 (25.09.02)
by virtue of the following:
an Assignment from KELLEY, Bruce T. to EXXONMOBIL UPSTREAM RESEARCH COMPANY dated 10 October 2002 (10.10.02).
This declaration is made for the purposes of all designations, except the designations of the United States of America.
·
This declaration is continued on the following sheet, "Continuation of Box No. VIII (iii)".

Sheet No. ....7...

Box No. VIII (iii) DECLAR CON: ENTITLEMENT TO CLAIM PRIORITY
The declaration must conform to estandardized wording provided for in Section 213; seconds to Boxes Nos. VIII, VIII (i) to (v) (in general) and the specific Notes to Box No. VIII (iii). If this Box is not used, this sheet sheald not be included in the request.
Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii)):
In relation to this International Application
KELLEY, Bruce T. is entitled to claim priority of earlier Application
No. 60/413,350 filed 25 September 2002 (25.09.02)
by virtue of the following:
the applicant is the inventor of the subject matter from which protection was sought by way of the earlier application.
This declaration is made for the purposes of the following designations for national and/or regional patents: US.
•
This declaration is continued on the following sheet, "Continuation of Box No. VIII (iii)".

Sheet No. .. 8. . . .

Box No. VIII (iv)

N: INVENTORSHIP (only for the purposes of the designation of the United States of America) The declaration must conform to the transfer of the Box is not used, this sheet should not be included in the request.

to Boxes Nos. VIII (i) to (v) (in general

## Declaration of inventorship (Rules 4.17(iv) and 51bis.1(a)(iv))

for the purposes of the designation of the	
hereby declare that I believe I am the original, first and sole (if only nventor is listed below) inventor of the subject matter which is claimed as	ind for which a parent is or -B
This declaration is directed to the international application of which it for	
This declaration is directed to international application No. PCT/ o Rule 26ter).	(if furnishing declaration pursuant
hereby declare that my residence, mailing address, and citizenship are as	s stated next to my name.
I hereby state that I have reviewed and understand the contents of the claims of said application. I have identified in the request of said application priority, and I have identified below, under the heading "Prior Age the World Trade Organization, day, month and year of filing, any application than the United States of America, including any PCT international United States of America, having a filing date before that of the application	pplications," by application number, country or Member of ation for a patent or inventor's certificate filed in a country I application designating at least one country other than the on on which foreign priority is claimed.
Prior Applications:	
I hereby acknowledge the duty to disclose information that is known by §1.56, including for continuation-in-part applications, material informat prior application and the PCT international filing date of the continuation	n-in-part application.
I hereby declare that all statements made herein of my own knowledge belief are believed to be true; and further that these statements were ma like so made are punishable by fine or imprisonment, or both, under S such willful false statements may jeopardize the validity of the application	ection 1001 of Title 18 of the United States Code and that on or any patent issued thereon.
Name: KELLEY, Bruce T.  Residence: Kingwood, Texas. (city and either US state, if applicable, or country)  Mailing Address: 5619 Rocky Brook  Kingwood, Texas, 77345	
Citizenship: United States of America  Inventor's Signature: Difference or if declaration is corrected or added under Rule 26ter after the filing of the international application. The signature must be that of the inventor, not that of the agent)	Date: 30 June 2003  (of signature which is not contained in the request, or of the declaration that is corrected or added under Rule 26ter after the filing of the international application)
Name:	
Residence: (city and either US state, if applicable, or country)	
Mailing Address	
Citizenship:  Inventor's Signature:  (if not contained in the request, or if declaration is corrected or added under Rule 26ter after the filing of the international application. The signature must be that of the inventor, not that of the agent)	Date:
This declaration is continued on the following sheet, "Continuation of the following sheet," "Continuation of the following sheet, "Continuation o	on of Box No. VIII (IV)".  See Notes to the request form

	Sheet No9	
Box No. IX CHECK LIST; LANGUAGE O	FFILING	
This international application con (a) in paper form, the following number of	This international application is accounted by the following item(s) (mark the applicable check-boxes below and indicate right column the number of each item):	ing Number of items
sheets:	1.  fee calculation sheet	: 1
request (including declaration sheets) : 9	2. a original separate power of attorney	: 1
description (excluding sequence listings and/or	3. original general power of attorney	:
tables related thereto) : 12	4. copy of general power of attorney; reference number, if any:	•
claims : 2	5. statement explaining lack of signature	:
abstract : 1 drawings : 3	6. priority document(s) identified in Box No. VI as	
	item(s):	•
Sub-total number of sheets : 27 sequence listings :	7. translation of international application into (language):	:
tables related thereto :	8. separate indications concerning deposited microorganis or other biological material	sm
(for both, actual number of sheets if filed in paper form, whether or not also filed in	9. sequence listings in computer readable form (indicate type and number of carriers)	<b>:</b>
computer readable form; see (c) below) :	(i) copy submitted for the purposes of international sea under Rule 13ter only (and not as part of the international) application)	
Total number of sheets : 27 (b) only in computer readable form	· · · · · · · · · · · · · · · · · · ·	eft
(b) only in computer readable form (Section 801(a)(i)) (i) sequence listings	the copy for the purposes of international search un	der :
(ii) ☐ tables related thereto	(iii) together with relevant statement as to the identity o	f the
(c) also in computer readable form (Section 801(a)(ii)) (i) sequence listings	10.   tables in computer readable form related to sequence 1	•
(ii) tables related thereto	(indicate type and number of carriers)  (i) copy submitted for the purposes of international sea	irch under
Type and number of carriers (diskette, CD-ROM, CD-R or other) on which are contained the	Section 802(b-quater) only (and not as part of the international application)	:
sequence listings:	(ii) (only where check-box (b)(ii) or (c)(ii) is marked in column) additional copies including, where applications copy for the purposes of international search under 802(b-quater)	left ble, the Section :
(additional copies to be indicated under items 9(ii) and/or 10(ii), in right column)	(iii) together with relevant statement as to the identity of or copies with the tables mentioned in left column	f the copy:
	11. A other (specify): Return receipt postcard	: 1
Figure of the drawings which should accompany the abstract:	Language of filing of the international application: ENGLISH	
Box No. X SIGNATURE OF APPLICANT,	AGENT OR COMMON REPRESENTATIVE nd the capacity is not obvious from rea	ding the request)
Next to each signature, that cate the name of the person signing a	nu the capacity in which the person signs (i) such capacity is not vovious from rea	ung me requesty.
<b>~</b>		
MALA	1/20/12	;
Dødglas J. COLLII	\(\s\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
<b>~</b>		
	D	
Date of actual receipt of the purported international application:	For receiving Office use only	2. Drawings:
Corrected date of actual receipt due to later be timely received papers or drawings completing purported international application:	ut ng the	received:
4. Date of timely receipt of the required corrections under PCT Article 11(2):		not received:
5. International Searching Authority (if two or more are competent): ISA/	6. Transmittal of search copy delayed until search fee is paid	,
	For International Bureau use only	
Date of receipt of the record copy by the International Bureau:		

This cha	eet is not pof and does not count as a sl	heet of the internation plication.	
This she	PC7	For For Office u	se only
FEE CALC	ULATION SHEET	International Application No.	
	to the Request		
Applicant's or agent's file reference	2000.063	Date stamp of the receiving Office	
Applicant EXXONMOBIL UPSTREA	AM RESEARCH COMPANY		
CALCULATION OF PRES	SCRIBED FEES		
1. TRANSMITTAL FEE		240.00 T	
SEARCH FEE  International search to be	carried out by EP	700.00 S	
	al Searching Authorities are competent to carry the Authority which is chosen to carry out the	y out the international international search.)	
3. INTERNATIONAL FEE Basic Fee	·		
Where item (b) and/or ( c	e) of Box No. IX apply, enter Sub-total nu	imber of sheets }	
Where item (b) and (c) o	of Box No. IX do not apply, enter Total nu		
b1 first 30 sheets .		476.00 b1	
	x 12.00 =	0.00 b2	
b3 additional compone	ent (only if sequence listings and/or tables computer readable form under Section 801 and on paper, under Section 801(a)(ii)):	related (a)(i), or	
400	_ 1	b3	
	fee per sheet	476.00 7	
Add amounts entered at	b1, b2 and b3 and enter total at B $\cdots$	476.00 B	
Designation Fees The international applica	ation contains 120 designations.	520.00 D	
number of designation for payable (maximum 5)	ees amount of designation fee	996.00 [	
Add amounts entered at	B and D and enter total at I		
(Applicants from certain international fee. Where t	States are entitled to a reduction of 75% he applicant is (or all applicants are) so entitle		
4. FEE FOR PRIORITY D	OOCUMENT (if applicable)	20.00 P	
		1,956.00	
5. TOTAL FEES PAYAB	t T, S, I and P, and enter total in the TOTA	TOTAL TOTAL	
Add amounts entered a	are not paid at this time.		<u> </u>
MODE OF PAYMENT  authorization to charge deposit account (see	ge postal money order	cash coupons	
Cheque	bank draft	revenue stamps other (sp	ecgy):
AUTHORIZATION TO (This mode of payment mode)	CHARGE (OR CREDIT) DEPOSIT AC ay not be available at all receiving Offices,	Receiving Office: RO	US

Authorization to charge the total fees indicated above.  $\boxtimes$ June 30, 2003 Date: (This check-box may be marked only if the conditions for deposit accounts of the receiving Office so permit) Authorization to charge any deficiency or credit any overpayment in the total fees indicated above. X Douglas J. COLLINS Name:

Form PCT/RO/101 (Annex) (January 2003)

Authorization to charge the fee for priority document.

LegalStar 2003, Form PCTREQ

05-1328

Deposit Account No.:

Signature: